

Von Braun's vision launches with Space Station

by Tracy McMahan

As NASA celebrates its 40th anniversary this month, scientists and engineers at the Marshall Center are seeing the dreams of the early rocket pioneers come true. In early 1952, Dr. Wernher von Braun, who would in 1960 become the Marshall Center's first director, wrote about his dreams in Collier's magazine: "Development of the space station is as inevitable as the rising of the sun; man has already poked his nose into space and he is not likely to pull it back." His plans for a large space station were published in a book the same year.

Soon, von Braun's dream will be realized when the first U.S.-built elements of the International Space Station are placed in orbit. As the Space Station — a permanent, orbiting research facility — evolved over the last 40 years, hundreds of Marshall employees and many local businesses have contributed to its success. It began with von Braun's space station ideas, inspired by fiction writers and scientists who had envisioned permanent outposts in space since the turn of the century.

In the classic, 1952 Collier's article, von Braun wrote of a majestic 250-foot-wide wheel that would orbit 1,075 miles above Earth and rotate to provide artificial gravity, similar to the station visualized in the movie 2001: A Space Odyssey. "From this platform, a trip to the moon itself will be just a step, as scientists reckon distance in space," von Braun wrote. But America wanted to get to the Moon before the end of the 1960s, so von Braun led the Marshall team as they developed the massive rockets that helped the nation achieve this goal.

Even as we raced to the Moon, Marshall engineers — inspired by von Braun's ideas — continued to study space stations, including

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"Safety is an attitude"

*Safety slogan submitted by
Richard Smith, HEI*



NASA photo by Adeline Byford

Center Director Art Stephenson speaks to Marshall employees during his first all-hands meeting held last week in Morris Auditorium.

Stephenson holds first all-hands meeting

by Mike Wright

Speaking before a standing-room-only audience in Morris Auditorium and to employees watching on Centerwide television, Marshall Center Director Art Stephenson held his first Center all-hands meeting last week.

The new Center director entitled his remarks "We Are In Control of Our Destiny." He encouraged employees not to worry about "external forces," but to focus on doing a "super job" so that "as we go forward with our roles and missions we are going to control our future."

His outline included reviewing NASA's priorities, Marshall's mission areas, its role as a space propulsion Center of Excellence, a cross-section of NASA assignments, the categories of work assigned to Marshall, NASA enterprises, steps in preparing a Marshall business plan, the NASA/Marshall environment and the Marshall mission statement.

NASA Priorities

Stephenson outlined NASA's top priorities: ensuring safe/reliable Shuttle operations; and launching, integrating and operating the International Space Station and gaining low-cost access to space. "It is clear that we are in the focal point for safe operations of the Shuttle. We have had a significant impact on lowering the cost of Shuttle operations and at the same time increasing reliability." Stephenson

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**Discovery set for launch
Thursday at
1 p.m. CST**



Flight: STS-95
Orbiter: Discovery
Launch date: Thursday, Oct. 29,
from Launch Pad 39B
Launch time: 1 p.m. CST (estimated)
with a two-hour, 30-minute window
Duration: 9 days (estimated)

Space research community to share findings at symposium Nov. 3-5

The Marshall Center will host the Third Phase 1 Research Program Science Results Symposium Nov. 3-5 at the Huntsville Hilton. The symposium will present and discuss accomplishments and results for investigations performed during the NASA 2 through NASA 7 Research programs, and enable the space research community to share data and promote an integrated understanding of experimental findings. The Phase 1 research program is comprised of about 100 experiments in seven major disciplines conducted both on Mir and the Space Shuttle. More information about the symposium may be found at the following Web site:

<http://shuttle-mir.nasa.gov/shuttle-mir/science/symposia/symposia.htm>
or contact Mir/Microgravity Mission Scientist Dr. Roger Kroes at 544-7770.

Nine employees win fire extinguishers during Fire Protection Week

The Marshall Center celebrated National Fire Protection Week Oct. 4-10. The Center held fire protection-related activities including fire extinguisher training, fire drills, informational displays and exhibits, and a drawing for nine home fire extinguishers. The nine winners of home fire extinguishers are: Becky Brown, DIS; Brad Garland, AP01; Larry Breazeale, RA30; Willie Love, CE01; Roslin Hicks, ES92; Tony Clark, EL23; Palmer Peters, ES75; Robert Hays, EL33; and Paul Allison, DA01.

Web sites offer latest Information on Space Transportation Program

The latest information and images on the Marshall Center's Advanced Space Transportation Program and its research into magnetic levitation for space may be found at the following Web sites:
<http://www.msfc.nasa.gov/news>
<http://stp.msfc.nasa.gov>



NASA photo by Adeline Byford

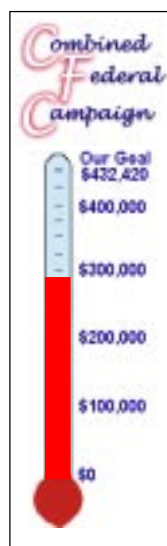
Marshall Center's charter members recognized

Marshall Center charter members were recognized last week during Center Director Art Stephenson's first all-hands meeting in Morris Auditorium. Thirty-seven of the Center's original employees remain at Marshall today.

Center pledges \$290,605 after third week of CFC

The Marshall Center's 1998 Combined Federal Campaign has reached the midway point and according to CFC Chairperson Cathy Nichelson, Marshall has pledged \$290,605.92 toward the Center's goal of \$432,420.

"Our average gift after three weeks is \$214.78," said Nichelson. "Now that the campaign is well under way, I would like to thank all employees who have given to this worthy cause. For those who have not yet contributed, please join me in taking advantage of one of the



most effective means of sharing our resources with those who really need our help." Organizations achieving 100 percent participation include: AB01, AM01, BF01, BF70, CC01, CE01, CO40, CO50, CR01, CR90, DA01, DE01, EB11, EE21, EJ33, EL01, EL61, HR40, MG23, PF01, PP02, PP03, JA01, JA02, JA10, JA21, JA41, JA51, JA52, JA63, MG10, PP01, PP04, SA45, TA61.

The CFC electronic pledge card is located at:
<http://inside.msfc.nasa.gov/CFC98/pledge.html>

Scientists meet to discuss 'space weather' during Marshall-sponsored conference this week

More than 100 scientists from around the world are meeting to discuss "space weather" in the magnetosphere Oct. 26-30 at the Guntersville Lake Lodge, Guntersville, Ala.

Power outages, disrupted satellite communications and radiation alerts for astronauts in space can result from space weather in the magnetosphere, an immense body of plasmas — gases

stripped of electrons — surrounding Earth.

At the Marshall Center-sponsored conference, scientists also will review what has been learned in recent years and discuss future missions, like the Imaging Magnetospheric Explorer satellite, which will provide scientists space "weather reports" similar to those that weather satellites provide for meteorologists.

Inspired by Glenn, Space Shuttle managers prepare to give hero a ride back into space

by Deana Nunley

Alex McCool remembers being “in awe” of John Glenn. Shortly after Glenn’s historic Friendship 7 flight, McCool found himself sitting next to Glenn in a Houston meeting, listening as legendary rocket scientist Dr. Wernher von Braun outlined the propulsion strategy that would launch Americans to the Moon.

Now, 36 years later, McCool, manager of the Space Shuttle Projects Office at the Marshall Center, expresses a sense of honor and humility at the responsibility to safely return an American hero to space.

“It really touches me,” said McCool. “I feel honored to be part of the STS-95 mission of the Shuttle Discovery. It’s a humbling experience to know that he’s flying on our propulsion system.” The Marshall Center is responsible for propulsion elements for all Shuttle flights, including the sophisticated Space Shuttle main engines, solid rocket boosters, solid rocket motors and the huge external fuel tank.

McCool recalled the conversation over lunch that spring day in 1962.

“John started talking about Ted Williams’ baseball success – they were Marine pilots together in World War II and the Korean War. Williams was about 40 years old and his baseball career was ending,” said McCool. “Back then, folks in their 40s seemed old, and I remember John saying, ‘You’re not over the hill when you turn 40.’”

“That stuck with me ever since,” said McCool, 74, “and now he’s almost twice that age and getting ready to fly again.”

Like McCool, many of the people who are now responsible for Glenn’s ride back into space were somehow inspired or motivated by his achievement.

John Chapman, deputy manager of the Shuttle Solid Rocket Booster project at Marshall, was a fifth grader at Pine Street School in Spartanburg, S.C., when Glenn became the first American to orbit the Earth.

“I remember it like it was yesterday,” said Chapman. “Our typically squirming fifth-grade class was totally calm and quiet listening to the launch on the radio.”

“When I got home from school that afternoon, my dad – who was an architect and happened to stay home from work that

day – was bowled over, choked up with emotion, the whole day after watching Glenn’s launch on TV,” said Chapman.

“Americans felt a phenomenal sense of pride in what Glenn did then, and I’m just tickled to death and extremely honored to be part of his second flight,” he said.

Adding to Chapman’s keen interest in Glenn’s first flight was a family vacation to Washington,

D.C., only months before Glenn’s 1962 flight atop an Atlas rocket.

“Dad took a picture of me next to a full-size, bright silver, stainless steel mock-up of an Atlas rocket at the Smithsonian Institution,” remembered Chapman, “and after that, he says I told him I was going to work on those things.”

Chapman said he doesn’t remember a time when he didn’t want to make “flying machines” his career. He’s spent all 25 years of his career working on rockets – namely the Space Shuttle.

And will this Shuttle launch be different than others?

“Slightly, perhaps,” said Chapman. “It will be an emotional moment to hear whatever is said as we approach liftoff. But in terms of our standard responsibility to make sure everything is done right, it’s absolutely no different than any other I’ve ever been involved in – they’ve all got to be done exactly right.”

Keith Henson, manager of the Reusable Solid Rocket Motor project at Marshall, echoes Chapman.

“Every person working on propulsion for the Space Shuttle has a strong awareness that this is serious business. In that regard, this one is just as serious but no different than the last one and the next one,” said Henson.

Fresh out of college, Henson started work in the Aeroballistics Laboratory at the Marshall Center about a year before Glenn’s flight. “We were doing aerodynamic work on the Saturn program, headed to the Moon. John Glenn’s flight proved to us that it would work, that you could do it,” said Henson.



NASA photo Emmett Given

Coming full circle, Alex McCool, manager of the Space Shuttle Projects Office at Marshall, recalls sitting next to John Glenn during a meeting where Dr. Wernher von Braun outlined space propulsion strategy.

“Now, we’re really pulling for him because this man has again committed to serve our country, to go beyond the call of duty,” said Henson. “It’s an honor for us to be giving him this ride to space. It makes us feel like we’re in the saddle with him.”

George Hopson, manager of the Space Shuttle Main Engine project office at Marshall, was working in Fort Worth, Texas, for General Dynamics when Glenn made history. Hopson recalled the American public was “genuinely alarmed” after the Russians launched the first satellite and the first human in space.

“John Glenn’s flight helped restore the confidence of Americans and captured my imagination for working on a program that almost had patriotic connotations,” said Hopson.

“When a recruiting team from Marshall Space Flight Center came to Fort Worth, I applied,” said Hopson, “and I’ve enjoyed every minute of my work here. Working on the Saturn launch vehicle and the Space Shuttle makes a person feel like a small part of history.”

Parker Counts, manager of the External Tank project at the Marshall Center, was a senior at the University of Tennessee in Knoxville when Glenn achieved what Counts remembers as the “magnificent event.”

“It’s a privilege to be involved in this next launch and to reflect on all the accomplishments of almost 40 years of human space flight,” said Counts. “In a way, it brings the loop to full closure to send a pioneer back to space. We’re coming full circle and it’s a wonderful tribute to John Glenn’s abilities and to America’s space program.”

Marshall breaks down barriers

by Ann Marie Bryk

The Marshall Center has helped handicapped people overcome architectural obstacles long before the federal government made it mandatory to do so.

"The Marshall Center had been making modifications for disabled employees on an as-needed basis for quite a while," said Shelve Miller, Disability Program manager for the Marshall Center. "It wasn't until 1991 that Marshall began making modifications to accommodate public access."

The Guidelines '91 Program for Public Access prompted NASA to take a closer look at building accessibility and accommodations for the handicapped public Agencywide.

NASA conducted an Agencywide survey, including throughout Marshall, identifying and surveying buildings to determine what had to be done to accommodate public access and remove architectural barriers.

"With five years to accomplish this goal, the Americans' With Disabilities Act in 1992 brought about a lot of changes," Miller added. This Act, along with the Guidelines '91 Program, lead to changes in buildings 4202, 4203, 4712; and tour

sites, the picnic area and the Visitor Information Center at Marshall.

"All renovations at Marshall were done in accordance with the Uniform Federal Accessibility Standards," Miller said.

Modifications and provisions made this year at the Marshall Center to better accommodate the needs of disabled employees and visitors include:

- ❑ Increased handicap parking space for buildings throughout Marshall Center and signs designating direction to handicap parking for Bldg. 4200
- ❑ A special camera was installed on a paralyzed employee's wheelchair allowing him rear-view sight.
- ❑ Modifications to the women's restrooms located on the third floor in Bldg. 4200 and the fourth floor in Bldg. 4202.
- ❑ New, lower water fountains were added to Bldgs. 4200 and 4202.
- ❑ Motorized wheelchairs are provided for employees to use while at work.
- ❑ Sensor devices installed at many outside entrances, including the door at the west end of Bldg. 4610 and going into the cafeteria.
- ❑ Door sensor devices to reduce the pressure required to open the men's and women's restroom doors in Bldg. 4200 were installed.

SEDSAT launches Oct. 25 on a Delta II; Marshall provides testing

The Students for the Exploration and Development of Space satellite (SEDSAT) was the secondary payload on a Delta II rocket that launched successfully Oct. 25 from Cape Canaveral Air Station, Fla.

SEDSAT — designed and built by a group of engineering students at the University of Alabama in Huntsville — was originally scheduled for deployment from the Space Shuttle.

When the mission was cancelled in 1996, SEDSAT was converted into a free-flying satellite deployable from a Delta II launch vehicle. SEDSAT's secondary payload space was provided on the Deep Space 1 mission.

Deep Space 1 is the first mission of NASA's New Millennium Program designed to test and validate new technologies for science missions in the 21st century. A solar-powered, ion propulsion engine provided the thrust for Deep Space 1. NASA Solar Electric Propulsion

Technology Applications Readiness (NSTAR) provided ion propulsion for the mission.

NSTAR is part of the Advanced Space Transportation Program at the Marshall Center.



NASA photo by Terry Leibold

Olympic gymnast Cathy Rigby, front row, second from left, and the cast and crew of "Peter Pan" toured the Marshall Center last week. Marshall's Bill McMahon of the Nonmetallic Processes Branch explains the 60K Fastrac engine.

NAFP director to visit Marshall

The NASA Administrator's Fellowship Program (NAFP) is designed to enhance the professional development of NASA employees and the science, mathematics and engineering faculty of minority-serving institutions.

In an effort to increase NAFP participation at Marshall, Lynda Sampson, NASA Headquarters NAFP director, will brief Center employees interested in participating in the program from 9:30-10:30 a.m. Nov. 10 in Bldg. 4203, room 1201.

Dr. Shelia Nash-Stevenson, an electronic engineer with Marshall's Astrionics Laboratory, Instrumentation Branch, is participating in the 1998-99 NAFP at Alabama A&M University in Huntsville. The program also aims at increasing the capability of minority institutions to respond to NASA's overall research and development mission. For details about the Nov. 10 NAFP briefing, call Willie Love with Marshall's Equal Opportunity Office at 544-0088.

As Marshall's partner

Stennis conducts 2000th Space Shuttle Main Engine test firing successfully

The rocket engine test team at the Stennis Space Center, Miss., conducted the 2,000th test of the Space Shuttle Main Engine at the A-2 test stand on Oct. 16. Flight engine #2049 was tested for 520 seconds with no problems occurring. All systems performed as expected. "We at the Marshall Center want to congratulate the Stennis team. They are our partner in the Space Shuttle Main Engine Project Office, and do all of the engine testing," said Shuttle Main Engine Project Manager George Hopson. "Their support has been outstanding."

"This major milestone is a testimony to the dedication and teamwork of the Marshall Space Flight Center along with the Stennis Space Center NASA-contractor team in delivering safe and dependable main engines for this nation's Space Shuttle program," said Pat Mooney of the project office at Stennis.

During a Space Shuttle launch, each of the three main engines that power the Shuttle operates for 520 seconds — from liftoff to orbit. With the completion of the 2000th test, single engines of the three-engine shuttle propulsion system have been tested for 656,562 seconds.

The Shuttle Main Engine — the only reusable liquid-fueled rocket engine in the world — was developed and manufactured by the Rocketdyne Propulsion and Power segment of Boeing in Canoga Park, Calif., and has been tested at Stennis since 1975.

"The experience we've acquired working as a team at Stennis through the Space Shuttle Main Engine Program will add tremendous value as we begin



Courtesy photo

The 2,000th test of the Space Shuttle Main Engine was conducted at the A-2 test stand Oct. 16 at the Stennis Space Center, Miss.

preparations for testing these next-generation reusable rocket engines," said Dave Geiger, director of Stennis test operations for Boeing.

In the coming months, engineers at Stennis also will test the XRS-2200 linear aerospike engine — also developed by Boeing at Rocketdyne — for the X-33 reusable launch vehicle.

The X-33 program is under the Space Transportation Programs Office at Marshall.

The X-33 is a vehicle that will demonstrate America's new space launch technologies.

The reusable launch vehicles — under development by NASA and its industry partners — have one shared goal: to demonstrate the technologies needed to dramatically lower the cost of putting payloads into orbit, while increasing the reliability of space exploration.

AIAA Defense & Space Programs conference starts today at the VBC

Center Deputy Director Carolyn Griner today will welcome attendees to the American Institute of Aeronautics and Astronautics (AIAA) 1998 Defense and Space Programs Conference at the Von Braun Center.

All Marshall Center employees are invited and can show their badges for free admission to the conference that begins today and continues through Oct. 30.

U.S. Air Force Maj. Gen. Gerald Perryman, commander, 14th Air Force, Colorado Springs, Colo., will be the keynote speaker at 9 a.m. today in the Von Braun Center North Hall.

Topics to be presented and Marshall Center speakers include:

- ★ "Status of Selected Space Programs" by Associate Director Sid Saucier;
- ★ "Near Term/Evolutionary Systems: Part 2: Expendable Launch Vehicles" by Robert Hughes, Upper Stage Projects, Science and Applications Projects Office;
- ★ "Microgravity Glovebox Experiment" by Roger Chassay, Global Hydrology and Climate Center; and David Jex, Glovebox Flight Program, Microgravity Research Program Office;
- ★ "Commercial Development of Space Transportation" by Joseph Hamaker, Engineering Cost Office, Program Planning Office;
- ★ "Advanced Space Transportation Avionics — Innovative Solutions to Meeting the Demands of Increased performance" by Dr. Michael Polites, deputy director, Astrionics Laboratory;
- ★ "Large Aperture Space Telescope Technologies" by Edward Montgomery, Advanced Systems and Technology Office; and
- ★ "Key Technologies/Demonstrators" by Garry Lyles, Space Transportation Programs Office.

The complete AIAA Space & Defense technical program may be found on the AIAA October calendar at the following Web site:

<http://www.aiaa.org>

Upcoming Events

'The Capitol Steps' to visit Marshall at 4 p.m. Friday

The Capitol Steps, a troupe of former congressional staffers turned comedians, will be at Marshall from 4-5 p.m. Friday in Morris Auditorium. Members of the group will talk about their work as congressional staffers, present a video highlighting their best performances and answer questions. Their Marshall Center appearance will be free and open to the public, but seating is limited. Employees interested in attending must call Rosa Kilpatrick at 544-0042 to reserve seats prior to Friday's visit.

The Capitol Steps will be in Huntsville to perform at the Von Braun Celebration to be held Friday in the Von Braun Center North Hall.

Hazard Communication training set for Nov. 9, 10 and 12

Employees who routinely work with hazardous chemicals are required to attend Hazard Communication training.

Classes will be held for civil service and on-site contractors Nov. 9, 10 and 12 in Bldg. 4200, room G-13. Classes will be offered at the following times each day: 7:30-8:30 a.m., 9-10 a.m., 12:30-1:30 p.m. and 2-3 p.m. The registration deadline is Tuesday, Nov. 3. For more information, contact David Thaxton at 544-8371 or e-mail: David.Thaxton@msfc.nasa.gov with first and second choice of date and time attendance preferences.

EDTeC offers employees training opportunity

The Employee and Organizational Development Office (EDTeC) is sponsoring the seminar "Act Like an Owner: Teaching Employees to Think and Act Like Owners of the Organization" from noon-2 p.m., Thursday, Nov. 5 in Bldg. 4200, room G13-1. The seminar also will be broadcast Centerwide on Marshall Continuing Learning Channel 14. Registration is necessary to receive credit for the course and participant materials. Employees may register via AdminSTAR. Registration deadline is 4:30 p.m. Nov. 4 with a class limit of 42. For more information, contact the EDTeC at 544-3343.

Vision

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concepts using refurbished rocket stages. This led to a precursor of today's International Space Station: Skylab, a two-level workshop made from a converted Saturn S-IVB stage. Skylab — the first American space program wholly dedicated to scientific research — was staffed by three crews who performed hundreds of experiments for more than 171 days from May 1973 to February 1974.

In a 1969 article describing Skylab, von Braun again foretold the future: "The heavy work schedule prepared for this observatory will also furnish valuable lessons about human proficiency for difficult scientific work performed under zero-gravity conditions over an extended period of time." Skylab experiments confirmed von Braun's prediction, providing the foundations for many investigations to be flown on the International Space Station. In fact, Skylab proved humans could live and work in space for long periods and would not need the artificial gravity in von Braun's early space station concept. Skylab experiments showed microgravity was not only beneficial but even necessary for some research.

Building on their Skylab experience, Marshall engineers and scientists continued space station studies in the 1970s and 80s. Their designs were used to help create the International Space Station.

Today, Marshall's facilities and technical expertise are being used to support fabrication and testing of Space Station components. The Boeing Company, the prime Space Station contractor, built Unity and the U.S. Laboratory modules in the same Center building where decades ago others assembled the Saturn V rocket — America's most powerful staged rocket that carried astronauts to the Moon. In addition to Boeing, more than 30 Alabama businesses have contributed to the Space Station effort, providing millions of dollars of services and equipment. Soon, the Space Shuttle Endeavour will carry Unity, the first U.S.-built component, into orbit and Space Station assembly will begin.

During the last 40 years, we have learned not only that humans can live in microgravity, but also that microgravity is itself a key area of scientific activity with benefits in the form of improved products and processes back on Earth. Marshall, NASA's lead center for microgravity science, is fostering the development of many International Space Station investigations. When the Station becomes

operational, it will offer scientists the first opportunity to do experiments over extended periods in this unique environment.

The Center's proven expertise with Spacelab — the reusable laboratory flown inside the Space Shuttle from 1981 to 1998 — is being tapped to build Space Station experiment hardware and plan microgravity investigations. Marshall developed a multiple-user rack facility, which was tested aboard Spacelab and will be used for experiments inside the Space Station, and Marshall is managing the development of special pallets that will be used for experiments mounted on the outside of Space Station.

"The Space Station program has been both exciting and challenging," said Teresa Vanhooser, a former Spacelab mission manager who is now manager of Marshall's Space Station Utilization Office. "Seeing the hardware being delivered to support the upcoming launches of Station components is watching a dream turn into reality. We are looking forward to the long-term science we can conduct."

One idea has not changed since von Braun's dream long ago: the goal of establishing a permanent presence in space. If magazine stories can ignite imaginations, what wonder will be fueled by a real Space Station where an international community lives and works together? This new reality will excite the next generation of scientists, engineers and space entrepreneurs.

As von Braun wrote in his Collier's article more than 45 years ago, "If we do it (build a space station), we can not only preserve the peace but we can take a long step toward uniting mankind." In the coming years, the citizens of Earth will be able to gaze into the night sky and see the International Space Station — the result of 16 nations joining together on the largest, peacetime, multinational program ever attempted.

In his 1969 blueprint for the future of the space program, von Braun wrote, "Exploration of space is the challenge of our day. If we continue to put our faith in it and pursue it, it will reward us handsomely." The International Space Station is visible proof of humankind's commitment to peaceful exploration of the universe.

Just 40 years after space stations still were considered science fiction, this journey of the imagination soon will climax with an unprecedented scientific, technological and international feat: the realization of the International Space Station.

Stephenson *Continued from page 1*

also said the Center is playing a large part in the International Space Station. "I don't think it is well recognized what Marshall folks have done in support of Boeing in getting the Space Station node ready. We are also doing a great job in terms of working the Express Rack, in overseeing the Italian Logistics Module and, I don't know if you know it, but we are going to be testing the truss structure." Stephenson said that in terms of low-cost access to space, "We are where NASA looks to solve this."

Marshall Mission Areas

Stephenson also listed Marshall's assigned mission areas including space transportation systems development, microgravity research, and space optics manufacturing technology and testing. He called space transportation systems development "our role within NASA," adding, "We have a great opportunity to deliver on that." In regard to microgravity research, Stephenson pointed to the upcoming STS-95 mission. "We currently have 50 some experiments on the STS-95, 15 different payloads. We are very active across NASA in coordinating microgravity research." Stephenson traced the Center's heritage in space optics beginning with the High Energy Astronomy Observatories, through Hubble Space Telescope and up to the Advanced X-ray Astrophysics Facility and predicted that the Center would have a "major role to play" in the next generation space telescope.

"These are great missions. I know over the past few years there have been feelings that we have lost the battle for turf," Stephenson said. But, he added, the importance of Marshall's assigned missions should eliminate any notion that "we are in second place."

Marshall Center of Excellence

The Center director discussed Marshall's assignment as a Center of Excellence in space propulsion. "Propulsion is the key to everything we [NASA] are doing in space. It is easily seen as our major responsibility." He added that the Center has now been called upon by NASA Administrator Dan Goldin to apply its expertise in propulsion technology in "new places" such as Future X vehicles and the advanced space transportation projects.

Other Ways to View Marshall Work

Stephenson said he also views Marshall's work in other ways. For example, he referred to Marshall as a key NASA asset in sustaining/upgrading engineering for the Shuttle propulsion system and for the International Space Station for pre-launch and post-launch support. "These are long-running programs. Obviously, the Shuttle is going to fly for a number of years and the propulsion system there will be upgraded. There will be a decision late 2000 whether to go forward with continuing upgrades to the shuttle or whether to shift to a new launch system. X-33 is the forerunner of a big part of that decision," Stephenson said. "On the International Space Station it's obvious that microgravity research is going to go on for many years and we will support the payloads on the International Space Station."

A second category of work assigned to the Marshall Center involves flight demonstrator development — specifically X-33 and X-34. "There's going to be another demonstrator. I don't know what it is. It's probably up to us to figure out what will be

the next demonstrator for space transportation. I would like to see us be proactive and go forward with one over the next year."

A third category of work that Stephenson listed included Technology Research and Technology Transfer. Under this category, he placed the Marshall mission areas and propulsion Center of Excellence; the Microgravity Commercial Development Centers and Technology Transfer Office; and Space Optics Manufacturing Technology. "NASA is shifting from an operations emphasis to research and technology. This is consistent with a shift in emphasis across NASA."

Response to Rumors

The new Center director also spoke candidly to employees about "rumors" that he has heard since his arrival at the Center. "I was not asked to come here and shut down Marshall Space Flight Center. I was not asked to come here and wipe out the first 100 managers ... I want to tell you straight out that I came here to work with the people of Marshall and to go forward in these mission areas and to use this technology for the people that are here," Stephenson said.

"We are a team ... We need to unite in supporting these mission areas and not go after mission areas that are designated to other centers."

Marshall Business Plan Development

Stephenson also illustrated his ideas on Business Plan Development for the Center. While definition of the Marshall Center's mission areas has been completed, the Center still needs to understand and define the current business environment, define the criteria regarding the work it accepts and define its desired cultural values. Central values, Stephenson said, should include, for example, integrity and a regard for a balanced family life. Out of this process, the Center should be able to define its top goals and ways to measure performance.

NASA/Marshall Environment

The current environment involves shrinking budgets and workforce downsizing, facts that are well-known by Marshall employees, Stephenson said. In addition, Marshall and other field centers are currently conducting core capabilities assessments that will be reported to NASA Headquarters at the end of the year, which will dictate future allocation of human and facility resources across NASA's Centers. Stephenson also commented on the plans to implement full cost accounting. "That basically means we will have to account for every dollar we spend ... What we are going to find is that we will need to make some changes." One measure of success, Stephenson said, will be "what our customers are saying about us."

Marshall Mission Statement

"We bring people to space and bring space to people," Stephenson said quoting the Marshall Center Mission Statement. "We are the world leaders in access to space and the use of space for microgravity research and development to benefit humanity."

Control of Our Destiny

"We are in control of our destiny," Stephenson said. "We have the missions. We have the goals. We don't have enough money, but we'll get it. There is nothing Dan Goldin wants to do more than go to Mars ... How do you get to Mars? You get to Mars riding on Marshall stuff. Success is defined as the progressive realization of a worthy goal. We have worthy goals and we are progressing."

Employee Ads

Miscellaneous

- ★ Couch, cream w/gold leaves, \$350; coffee and end tables, two-tier, \$350; three brass table lamps, \$50 each. 883-8186
- ★ Golden retrievers, AKC registered, one year old, \$150 each. 837-2461
- ★ Used kid's playfort/swingset. 771-2002
- ★ King mattress, \$400; table w/six chairs, two leaves, \$400; rocker/recliners, \$100/\$150 each; sofa/loveseat, \$250/\$150. 881-6388 after 4 p.m.
- ★ Gerry backpack, \$20; Century carseat, \$20; Gerry two-seat stroller, \$35; Tike safety swing, \$8. (931) 438-0476
- ★ Two female canaries, less than one year old, Yellow American, \$35 each. 534-5653
- ★ Couch, loveseat, matching chair, coffee table, two end tables, \$300. 881-1315
- ★ Britannica encyclopedias, \$300; two 18" x 36" x 72" bookcases, \$200; TV/VCR cart, \$25; rocking chair, \$50. 895-9248
- ★ Tuxedo, size 48 or larger, shirt 17-1/2-35, and/or accessories. 881-6040
- ★ Recliner chair, burgandy w/black, beige and blue stripes, Stainguard protected fabric. 828-3373
- ★ Kenmore heavy-duty washer and dryer, \$125 each; boys' and girls' 20" bicycles, \$45 each. 880-2218
- ★ 1/2 carat cluster ring on a wide band, \$400. 728-5679
- ★ Queen-size iron canopy bed frame, \$80; full-size pine futon platform, \$40. 881-3527

Vehicles

- ★ 1974 Volkswagon Beetle, \$2,195. 851-0893
- ★ 1987 Isuzu pickup, red, 83K miles, maintenance records, \$2,300 obo. 883-1874
- ★ 1982 Buick LeSabre, 188K miles, AC, light blue w/dark top. 852-0928
- ★ 1985 Mustang, red, 3.8 V-6, AC, \$1,500 obo. (931) 425-6870
- ★ Lincoln Continental 72K miles, \$8,900. 881-3322
- ★ 1998 Mazda, B2200, pickup, A/C, 5-speed, 114K miles, needs engine work, \$800. 851-6425
- ★ 1993 Jeep Cherokee, red, sport package, 4x2, automatic, cruise, A/C, PB/PS, 80K miles, \$8,700. 464-9967
- ★ 1991 34' Airstream trailer, many options, \$24,500; 1989 Ford Clubwagon, diesel, \$8,500. 881-9421
- ★ 1993 Honda Accord, 4-dr., 5-spd., 96K miles, black, one-owner. 828-5879
- ★ 1995 Nissan pickup, XE-V6, automatic, extended cab, matching fiberglass bed cover, 30K miles, \$12,900. 539-0094
- ★ 1992 Nissan pickup, automatic, 79K miles, maroon/white, cloth seat, bedliner, \$4,200. 880-9025

- ★ 1987 Corvette, AT/PS/PW/PM, power seat, Bose stereo system, security system, \$10,900. 882-6446
- ★ 1986 Chevrolet custom deluxe pickup, 350 motor, \$4,000 firm. 498-2116
- ★ 1988 Toyota Camry LE wagon, automatic, V-6, 118K miles, \$4,950. 882-1448

Wanted

- ★ Ride to work, 7 or 7:30 a.m. shift, will pay \$5 per day. 534-5398
- ★ Playskool Lovin' Sounds nursery. 772-3652
- ★ Honda mini trail 50s, trail 70s, other mini/trail bikes in any condition. 539-7379

Lost

- ★ Huntsville Times umbrella, left outside mailroom in Bldg. 4200 on Oct. 7. 544-5187

Found

- ★ Gold bracelet at Bldg. 4650, call and identify. 544-4758

Center Announcements

- ✦ **AIAA** — The American Institute of Aeronautics and Astronautics' 1998 Defense and Space Programs Conference will continued through Oct. 30 at the Von Braun Center. Admission is paid for all Marshall civil service employees with NASA/MSFC badges required for admittance. See the October calendar of the AIAA home page at: <http://www.aiaa.org/>
- ✦ **Lunar Nooners** — The NASA Lunar Nooners Toastmasters Club will meet at 11:30 a.m., Tuesday, Nov. 3 in the Bldg. 4610 cafeteria conference room. All Marshall employees, contractors and friends are invited. **Contact:** Lee Johns, 544-5241
- ✦ **MARS Ballroom Dance Club** — The MARS Ballroom Dance Club will offer polka and tango lesson from 7-8 p.m., Nov. 2, 9, 16 and 23 in Parish Hall of St. Stephen's Episcopal Church, 8020 Whitesburg Drive. Lesson cost is \$8 per person and available to MARS Ballroom Dance Club members, partners and guests. **Contact:** Pat Sage, 544-5427
- ✦ **Quality Lab Reunion** — The second reunion luncheon of the Quality Laboratory will be held at 11 a.m. Nov. 12 at the Redstone Officers Club. Reservations are required. **Contact:** Frank Batty, 536-9187, Art Carr, 881-8432, Dick Henritze, 534-8312 or P.M. Hughes, 881-1937
- ✦ **Flu Shots** — The annual administration of flu shots to all on-site personnel will be provided at Marshall's Medical Center from 2:30-4:30 p.m. Oct. 29 and Nov. 3.
- ✦ **Full Cost Training** — Full Cost training originally scheduled for Oct. and Nov. has been cancelled. **Contact:** Stephanie Elliott, 544-7553, Janie McCrary, 544-7552, Lisa Martin, 544-4374

✦ **MARS Fishing Club** — The MARS Fishing Club's major event "Classic Tournament" resulted in one boat weighing in fish Oct. 17 at the Waterfront ramp on Lake Guntersville. Mike VanHooser and John Pea brought to scales two fish weighing a total 4.62 pounds. Big fish bragging rights went to John Pea with a 2.58-pound largemouth. The next tournament "Live Bait" is scheduled for Saturday Nov. 14 at Safety Harbor on Wilson Lake. **Contact:** John Pea at 544-8437, Don McQueen at 544-9073 or Charlie Nola at 544-6367

✦ **40th Anniversary T-shirts** — The second order of T-shirts commemorating NASA's 40th anniversary has been received. T-shirts are available from 8 a.m.-4:30 p.m. Monday-Friday at the Marshall Center Activities Bldg. 4752.

✦ **Skylab 25th Anniversary Reunion** — The 25th Anniversary Skylab Reunion will be held from 6-10 p.m. Nov. 13 at Space Center Houston, Houston, Texas. All civil servants and contractors who worked in support of the Skylab Program and guests are invited. Ticket cost is \$17 per person and checks may be made payable and sent to: Skylab Reunion, NASA/Johnson Space Center, Bldg. 1, Houston, TX 77058-3696. Include name for identification tags and address and telephone number. The deadline for purchasing tickets is Oct. 31. **Contact:** (281) 244-1998 or e-mail to: skylab.reunion@jsc.nasa.gov

✦ **American Express Vacation Office** — The American Express Vacation Office at Marshall will be closed Nov. 3-11. For vacation travel arrangements or concerns during these date, **contact** the American Express Travel Office at the following NASA Centers: Kennedy Space Center, (407) 867-3927; Lewis Research Center, (216) 433-6342; or Dryden Flight Research Center, (805) 258-2375.

✦ **Nut Sale** — The Marshall Exchange annual nut sale will soon be under way. This year, the Exchange will be selling pecan halves, chocolate pecans, three types of almonds, pistachios, English walnuts and raw peanuts. The sale will begin prior to Thanksgiving. Nuts will be on sale in Bldg. 4752 on a first-come first-served basis to employees, retirees and on-site contractors. Pricing and delivery information soon will be available.

✦ **NASA Exchange** — Mattel's special edition "John Glenn Action-Pack Hot Wheels" at \$5 each and the Marshall Center "Beanie Baby" space suits at \$3.25 each are available from 8 a.m.-4:30 p.m. Monday-Friday at the NASA Exchange, Bldg. 4752.

Job Opportunity

CPP99-3-PL, General Engineer, GS-801-15, S&E, Mission Operations Laboratory, Office of the Director. This is a Centerwide announcement. Closes Nov. 2.

MARSHALL STAR

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